Rec'd PCT/PTO 28 MAY 2002

SEQUENCE LISTING

```
<110> Hart, Thomas C.
      <120> Methods and Compositions for Diagnosing
            Palmoplantar Keratodermas and Dysplasias and other
            Periodontal Diseases
      <130> WFU 99-35
      <140> 10/031,889
      <141> 2002-01-25
      <150> PCT/US00/20400
      <151> 2000-07-27
      <150> 60/144,644
      <151> 1999-07-27
      <160> 33
      <170> FastSEQ for Windows Version 3.0
      <210> 1
       <211> 45186
       <212> DNA
       <213> Homo sapiens
       <220>
       <221> misc_feature
       <222> (0)...(0)
       <223> n = a, c, t, or g
       <400> 1
agggagatat aagtgaataa tttggacctg ctctctttga atgtttataa tctggtggaa
                                                                        60
aaaaaatgga catatgaata ttgatttgtg accagtgcaa agggggcaaa aattcatatc
                                                                       120
ccaaagaaaa cggggacaca tcaggtctgt cttgttcatc actgtgtcca cagggcctga
                                                                       180
cacctagtag getcagtggg agaaaggage eccaattace aacaaaagee aggaaagaac
                                                                       240
                                                                       300
gggaggetet taeggaaaag ggtgataett aaactgagea aggaggeace tggaaatagt
gecaectaat aatttttgge gateagaetg acaeactaga aeggtteata agaecageet
                                                                       360
teteceattg getagettee tteeteacee tteteaceet gggeaageeg etteetetet
                                                                       420
ctgggcctct tgcttttcct ctgtaacata aaaggggttg agcaatatca tctctgagag
                                                                       480
                                                                       540
cgccatgtgt gtgcgtgcca gagggaaaac ccccacaacg ctaatacatc aaaactgcag
gtttgcacaa aaactgaatt ctgctgaatg caaacaggca aacagcattt accaggaaac
                                                                       600
aaaacaaaat caagcacata aaaaagtagg aagagttgga aaacggaagg aagataagtt
                                                                       660
ctcaaacagc tggaatagtt gatgttagct agcgaagttt ttcagaggaa aaaacaagaa
                                                                       720
gttggttatg aggcaagtgg acctgagaaa aaagactaaa ggggaagaat agcaagtaaa
                                                                       780
acagaactcc acttgctaga tctctccctc tgtcgcgctc tttcacctga cccactccct
                                                                       840
tattccccc acaccettte ettetetece tacgttaccg cacaggaacg aagtetgggt
                                                                       900
catgtgcgga ccgcttgtgg ctcttaaatc ctctttttgt caccctggcc gtgcaaaatt
                                                                       960
ttgaaacgtc cctcggcaaa aaaaataaaa ataaaaaaaa aaaatctgtc cctggcctct
                                                                      1020
tecetagite tgggiceagt tgeagecaag tgaggggeag egegegetee caagteeeeg
                                                                      1080
tttcagagac gcgcacgcgc ctggcgccca acccccaatc ccctgctgct cagtgacccc
                                                                      1140
                                                                      1200
gcccacgggt ttccgggccg gcgtagctat ttcaaggcgc gcgcctcgtg gtggactcac
cgctagcccg cagcgctcgg cttcctggta attcttcacc tcttttctca gctccctgca
                                                                      1260
gcatgggtgc tgggccetcc ttgctgctcg ccgccctcct gctgcttctc tccggcgacg
                                                                      1320
gegeegtgeg etgegacaca cetgecaact geacetatet tgacetgetg ggeacetggg
                                                                      1380
tettecaggt gggetecage ggtteceage gegatgteaa etgeteggtt atgggtaage
                                                                      1440
cgccggctcg gcagtcctcc gggtcgtcct ttctgccctt gagcccctaa cgcagcgcca
                                                                      1500
cgccaactac cgcttccccc caggcagacg cttgtgggtg gccagagcat cttgactgga
                                                                      1560
ttcggggacc cttggggacc ttcttccccg ccaggctcgc gaagttaaag ttcatctgct
                                                                      1620
gagaacttct aactccacac tttcttggtt atcttgggga ctcaacactt tgatcaagaa
                                                                      1680
cttttttatt cctcccgctt aattttgttt gctttgagag agacttggga actgcaatcg
                                                                      1740
```

tttggttctc cagtccgatc tggtagcgtt atttttaaaa tttatttta tttttatta 1800 ctattttact agtgaagata gatgagctca gagactctcg aggatatagc atgaagtttt 1860 ctctttttgt tagatggtgg gaaagggact ttctgcccag cgattttggt ttgagcgggt 1920 1980 gttgatgagt actagaaaac ggctagtacc actctgcatt gtttcatgca ttgcaaggag gtaaaaattt tttaaaaaat taataacaaa gaaaacttaa ctctgaacct agtaattaga 2040 aatgcccaga gtctgcacaa tgtttggctc atggaaggct ctcaataaat acctagtgtt 2100 tgaacatact ggagatattc catatgcctt cagataacat ggttacccct agaacaaaga 2160 2220 acctagtgaa gggggtgggg tggaaaaaag acaatcacta gttagaagag tcacactgtg gtctacccaa accetettac agectgtgac ttctgcagag tcagtaaaaa atcagetata 2280 attttcttgt caacagaaca aagattaagt catttgttac taaagaaata cctttttaac 2340 tgactgtata gcatttcata atcctgaaca ttgtaacttt ttttttttt tttttgagaa 2400 tggagtettg etetgteace caggetgtag ttcagtggcg ggatetegge teactgcaac 2460 ctccgcctcc cgggtttaag cgattctcct gcctcagtct cccgagtagc taggattacg 2520 ggcacatgcc accacgcccg gctaatattt tgtattttta gtagagacgg gtttcactgt 2580 gttagecagg atggteteca teteetgace tegtgatecg ecegeetegg ceteccaaag 2640 tactgggatt acaggcggga gtcaccacgc ctggcctttt ttttttttt tttttaaat 2700 ttgagtttga aggttggggc agaaagagat caggatttgc actgccctgt cacatgcaat 2760 ctcccatgtc agagcattac tetcaaacat ggaaaaactt taaaatacac aactetecag 2820 atggacacag ctgaatcatt ttcaggaagg ctctgcctat aaaattacct ttggccttaa 2880 ttcagtaatt aaaggcaccc acaggtctga gccctcatct atgaaggtta aacgtatcat 2940 tectateage actaattggt tttataggat acagacetet agtttgetga ataaaetttg 3000 gaaggattca gattatgagg ttctaaactg tagagcettt gaggagaaag gtaccccatt 3060 tetteteega atagateatt ttgtgtette teetgggett ageacattgt etteettagg 3120 3180 atctgatagt ctgtttattt atctttttgt tgtcatacct tttattcttg catttcccac ttttgactag cattttgcct tttctccgtt tctggaagcc tgtaattttc aacattcccc 3240 3300 atttctcctt ttgttcagtg gaaaaatttc ttcagtgttg ggatgctctg gaaaggtact gtagttttgg gggtctccct gcctgctggg ctgcatagca tatctctctt ttttgagaca 3360 aggictcact gigttgccca ggttggaaig cagttgtgca atcatagctc actgcagcct 3420 ccaactectg ggetcaagca atecttecae etcagettea geegetcaaa tagetgggae 3480 tacaggcaat gcaccaccat aaccagcgaa tttttaaaaa ttattttgt agagacaggg 3540 teteactatg ttgeccaaac tagtettgaa gttetgacet cageceegea aagtgetagg 3600 attacaggeg tgagecactg ettetgettg cattatetea aatttttaga geetaaette 3660 acagtettge eteggageag gaactgtttg aggeaacaag atggageete tggtttette 3720 actaggcaga ctgtgctcaa actgggtagc atgaaaggaa agcagcacaa ttaaaattga 3780 aattggggga ttettteece tattgaaate caaataattt teetttattg tgetttttt 3840 tttttttttt aggaccacaa gaaaaaaaag tagtggtgta ccttcagaag ctggatacag 3900 catatgatga cettggcaat tetggccatt teaccateat ttacaaccaa ggetttgaga 3960 ttgtgttgaa tgactacaag tggtttgcct tttttaaggt tagttttgtt ggaagttgga 4020 tttacatttt caatgatttg atatctgaaa cctcttctga ttagtagacc ctcagaattt 4080 taattttaga ttaagaagat gaccggaatt gacaccactc ttcccaagag tagtagt 4140 tggtataatt ttgccacttt atttaaaatt atgattttag taggtttaca aaataccagt 4200 gctacatttg aatatgtata aattatgttt aaaatttaca ttttggtaag tatgactaaa 4260 ttcttaattt attttcctta ttactaccac tttatttcta aatgttgcca tagtcatttg 4320 getttgttet aaatetgtag gaaagataga gagattacae attttgtttt ettgeagtta 4380 ctatgctgtc cttcctatca ctacctgttg gctgaggtag tgataggcct aaatgattca 4440 ttatcttaaa tgtactaaat atgttgagta atttttctt ctaaactaac agaaagagag 4500 aacctaggag ttactccctt aggctggtta aagtgaaagg tagccaagtc aacccagctt 4560 gtttccttct ctcattagga aagaactatt gttcattctc ataacacact ttttccaatt 4620 gcaaacatac tcagggttaa aatagtttag cacaaattgc agcccatttc atttgttctt 4680 cacaagctgg aacttttctt gtaagctaaa tattaaatgg ttcaagtaaa ttggatacat 4740 aagcctgaaa ctaggcgttt ctcattatac atagagtata aattaagaca gactttttca 4800 tggtgaaagg tttacagcct ttaaaacatc tgggaaagaag tgggaaagta gggaataact 4860 ctgttaaata tgataaaaga caaagcacca acaaaggcct agttctaaac ttgttataat 4920 ttctcatggg agttgtggtt tgtcacaagg ttatggcggt ccaagcaagt ttacaatatt 4980 ttttagaata ataactccca gaaatatttt taaaataagg acctttcttt aatatggaaa 5040 aaaaaaagat gaaatagaga ggaagaggtt gcctttcctc aactggattt gctggtgtga 5100 tatgcagctg gtggaaacca gtttgtccat gctagctgtt gatggccacc agtccactga 5160 attagtggaa acccatgett aaccagttgt taactatttt tagtateatt tecagatget 5220 5280 acgcattttt tttgtaaaaa acatacttac aatagtatct atataaattt ttaaaaattgt aatgtatatg tggtatattt aacctgaaaa taatctttgg tgtatacgtt gatgagccta 5340 ggcctttgca gacctcttac agttactctg tcacagccct tcacaggttc tttgacttca 5400 gattaagaat caattgcatg tggaatgcat gtgcaaagga agagatattc aaggcaattg 5460 ttaccatgta ccataaacct tgtacataat tttttgtcat tttcttttcc tctgtctcta 5520 tcccttcttc tttgacacac aatagacacc tagtcaattt attacaaaaa aaatgaatga 5580 atgaagtgga attcagttgg gaaataggtt aaataaatta tttaggagat gaggaatagg 5640

5700 taaaaagaga caagtacata gtttattctt ttgacttaga aaacttttga ttcttaaatt ctgcagaatt ggagaaactg gtggggaaac ttctaaaatc attatttaat taccagagat 5760 5820 gtaatagata tagacaaaag cagttttctt cttttattat tttttcatca gttagttctt agcttaaata gtagtccaaa gctggtaggg acagagggaa ttagctggtg gctgaatgag 5880 gaattgtatc actttttgtg aatcacggtg taagcacatt tggtgttttg ccattgccta 5940 agaacattag tcacattagg tcaatagaaa atcacttttt aaagccaaat aaagttatat 6000 gtgttcccaa ccatgagttg gaaagaatta atatatatgc tgttggaggg tagaaccctg 6060 6120 cctaatcata tggttctgga tggcattgat cgaatcctta ttctttcatt aggaataaca atagaaaaaa tactcctgcc ctactgattt caggatatgt ctattttaaa gtgcccattt 6180 gacaaaacca ttatcagggc catgttttct ttttctgcag aaaaatcaac cactctggtc 6240 agtagttagg tettatgaca agcaccataa ttteettagg cagagtagaa tataatagga 6300 tacttctttt tgaaacttaa tataatcagg tagttccaga taaacatagc ttgcaaagtg 6360 6420 ataaaatacc atgttatttt agtaaatcca attgcaagag tgatgggaaa cagagtttaa aaacttaaga aagatattaa gatggagttg actttgaata ataaagtcat ccactgttga 6480 tgggtgacat ttattaatac agaaagttta cagattttac cataagcatc agggtatttc 6540 6600 ctgcagctgg ggaaaccgtg cttgaaagga tgcgtaactc aaggaaaaca caagcccatg taataagtat tgcatgtgag aattgttcct atagaattag aaagcatctt ttacattaaa 6660 atttattttt gtaaaaagag aaaacatcaa aacttgagta gtatttgcta ttcaaagagt 6720 6780 cttacataaa cgaaaacata ctcaacctac tgccattaca gaaatatttg acaaattctt gccatgctta cctgccatcg ttgttgttat cctacaaatc aattggatti tcacgcctct 6840 ccactgactg gaaccctaca acttgcttcc ttttatcctc tttatatatg cttcagatat 6900 gcttgaagta gattgtttct tattgttctt gctgctcgag tttgttgagt agttggtaca 6960 tgcagagtat ttgtatgtta tgacatatat aggttttgtc catggttcct ggctcataac 7020 teacteceaa gaccettgtt acagaaacca gaatetetet etetgatett etectaceet 7080 cctttcatct gcccactgca gaactctaat ctgattatgg tttctaagac cctcatacca 7140 gagagtattc tgccccatac catagcagaa ggaacactgc acagagacac caagaagaat 7200 ctgaacagac aggccttgtt aggtttagat catgtcctta taacctaatt atattttaac 7260 atggttatcc atgctttaat catgtgtatt caatgaacgc tccataaaag cccaagaaga 7320 acagatttga gggaattctg aagcgctaaa catgtagggt ctgacaggaa ggtgaagaag 7380 7440 aactcatcat gctggaaggg tggtccaccc taactccgca gggacagaag ctcctgtgtc tgggaccett ccagaacttg ctctatgtat ctcttcaagt gcctgtgtat ttatatcett 7500 tcaaatatcc tttgtaataa atcataaaca tgtttccctg agtttttatg ccactctgtc 7560 aaattaattg aacccaaaga gggggttatg ggaaccccaa tttgaagcca gtccatcaga 7620 agttetggag geetggaett gagaetggtg tetaaagtgg geaggeagte ttggggaeta 7680 7740 agccctcaac ctacgggatc tgaaactgtc tcctggtagg tagcattgga gttgtactgg 7800 agggcactga gctggtgtct gctgcagaat tgattgcttg cttgctggtg gggagaactt cctacatatt ttggggtcac cgaagtcttt tgtattgatt gttgttgctg agctcctatt 7860 gctagaaact tgctttatta agttctgttt attcagggct tatctgaaag agaaacattt 7920 tttatgattt gagatttcta agccatttta aaacttggtt ttaacagctt gagaaattgg 7980 gggtatagta gggatggaga tacatatatt tggatgtgac ttcaagctag ataaaagttt 8040 8100 taggtatgtt tttaaaatat ttttttcagc caggcacggt gactcatacc tgtaatccca 8160 gcactttggg aggccgagac aggcgatcac ctgaggtcag gcgttcgaga ccagtctggc 8220 caacatgaag aaaccccgtc tctactaaaa atacaaaaat tagctgggtg cggtgacaca 8280 8340 tgcctgtaat cccagctatt caggaggctg aggcaggaga attgcttgaa cccaggaggc 8400 agaggttgca gtgagccgag atcacaccat tgcactccag cctgggtgtc tcaaaataat aataataata aaaaaatgaa agattttttc ttactcagca tcctccaggc attttattat 8460 ctgagcactt tatgggagtt gcatattaca tttagggccc actcaggtgg gtgggtatct 8520 aagcatttga aataacctta tgtaaactaa taaggagtaa tcaggcctgt ggcaagatgg 8580 aaacagtctt agaggcattc aaattcaaat ttcctttaaa acactgggct ggccaaaaca 8640 aaagacaata ctatctacag gccagtttct aagattatca gattttagta gcatttacca 8700 tttcattgta cttggcacac tttagcaaat ttgcacttct taaaagtacc tgcaggcaat 8760 8820 ctcctatata aaaacacaat gcaggctagc ttggctcctg cctttaattc cagcactttg agaagttgga gactagcgtg gccaacgtgg tgaaacctca tctccactaa aaatacaaaa 8880 attagecagg catageageg caegeetgta gteecagtta ettgggagge egaggeagta 8940 gaatcacttg aacgctggag acagagcatg gagtgagctg agattgcacc actgcactcc 9000 atcctgggtg acagcgtgag actctgtctc caaacaaaac aaaacacaca cacacaaat 9060 9120 gtaacaacac gaaacagaat actgtgaaaa tgcttaatta tgtctgactt tacatgatgg 9180 ctggatatgt gattattttt tcttctttat gctcttatgt actttgttca tttttaatga tgatcatgta taaagctcct ctgtgtagca ttctctccac caaattgccc agagacagga 9240 agtcctgtaa aacaaactaa gctccaaaaa atgacctcct gttgaatagg ctttttttt 9300 ttttttttt tttttttg aaatggagtc tagctctgtc tcccaggccc tcgctccttc 9360 cacctcctgg gtttaagaga ttgtccttcc tcagcctcca gagtagattg gattacaggt 9420 gecegecate aegeceaget aatttttgta tttttagtag agatggggtt teaecatgtt 9480 gaccagactg gtcttgaact cctgacccca agtgatccgc ccgcctggac ctccccaagt 9540

9600 gctgggatta caggtgtgag ccaccacgcc cagcctgaat aggctttcta acctactgtt tctcatttta ctttctctga ggcagtaaaa gaaactgact ctaaaaggga gcagtagaga 9660 9720 aggaactcag attttatttt gaagattaag ctactcaagg gctgaggaaa tatgtagagg 9780 ggaagtagac tcattatggc tggaaatttt atttggtgat agtgaagcaa atcttagggc tttctaattg agctcttgtt tgaaaggctc caatcttaat agaactataa gctaaaaaaa 9840 9900 atgaccatca gtgtttctaa agcaagttgc tactcaaaac aagaacactt tgggaggctg 9960 gggctggtgg atcacctgag gtcagaagat ggagtccagc ctcaacatgg tgaaacccct 10020 ctatactaaa aatacaaaaa gtagccgggt gtggtggtgc acgcctatag tctcagccac ctgggaggct ggggcagaag aatcgcttga acccgggagg tggaggttgc agtgagctga 10080 10140 aaacagaaac aagaactcta tgttgagaaa tccatactag agggtttaat ttctcacttt 10200 gtgtgctagt gattaataaa tttcaagctt atcacacagc cagaaatgtc gcctgtgttt 10260 ctacaataaa agatttggga atattgtgac attttttcac tgagccttct gggttcatta 10320 ttaagatata acaattttag aagacttatt gagataggta tactttttaa aatttggatt 10380 10440 10500 acttgtaaga gtatttcagt ggaggaaaag tatcagaagt ttagcactga gtgcctgcct aactatttta tgtcttcttt catgatgatg cttaatctca acataatgac tcagtttacc 10560 10620 attgtaaact ctttgtagga tgtcactgat tttatcagtc atttgttcat gcagctggga actgtgggga tatatgattt gccacatctg aggaacaaac tgggtgagct ccattgaaaa 10680 atttctaact ttcttattaa aagcaagctt cctcacttcc tgatggctta tgcaaattaa 10740 tgcctattta ttcatcagag ggtgactgga gagattatgg ttttcttatg aatttcttgc 10800 ttgagcctgc ttgtctgctg tttctaagtt gtctgcacta ttttatgtga gtaattttct 10860 10920 actttattat gttctgtttt cacatgtcaa atcagctctc ccaagaatgc tacttgtaac 10980 ctaagtagac gtgaaccgaa aagggtaaag acccagctaa aaaaaaggtt gactcaagtt 11040 cagttcacat tcgtaaagta gttaggctgc cttaggttgc ttattctttt cttgaaaaga ateceteaag agagaaacat gtgaggeeac ageagettag atetgtette cacagagaag 11100 gtggctttta cagagaaatt gacatactca tcacttatct gacatgaccc agctttgtaa 11160 aactggcttc tattaaaata gtcttaatag actattcact gaggaggaga gaatcttatt 11220 cactetttae attetettea catttteaga atagatgttt aaateattge teacaetgga 11280 tccataaatg tctaaaatgt tgatgaagaa ataggtgatt agagagtaaa attaatagag 11340 acttaccett cettgeattt taacataata ttettteece tttteettee tetgttaett 11400 ggctcttaaa taccagaagt gagatatgaa aaagggaact gggaacaagt attgaaagca 11460 11520 ccataggttt atcttatatt agcattttcc aaactttata atgaaccagc agtgacccac acatctgcca ggtaggaatt gctcatcagt tgtgtcgcgt tatcttgtta agcttcagca 11580 atgttccata cagccactaa taacagatca aagtgagcat tagggttgaa attagtaagc 11640 tgittettet cagttette tggtagttga ataaatatag aatgtattaa atagitttet 11700 ttatttcaga acttctcaga gtctgtaata tattgtatgg tggtagctta ggaggaagat 11760 gcaataggaa acttttccca gataggttca ctatttttt tttccacgaa aaataagctg 11820 ttctcaaaat acagtttaca aaattttatc cttaactctt cactctttct cctagttagg 11880 11940 gagaccgctc caccagtaga aaagataaac cctggtaatt tgttgtgtaa atgggataaa tagcctagta cctagtcatg tggattcagg cagcactgag cctaaattaa agtttgcaag 12000 gtatacatgt taatgtatct aagttactat atttagcctg tttcttaagt atgtttcaga 12060 aacatattcg ttttttcag tggcagttac cttcagatgc atgtgcttct aaagcatgtt 12120 ggttgcatgt gcagtacatg ttgcttaagc atttagcttc agaatggcat ctttcctgtg 12180 aatgtottaa catttacaaa aatataccag gatotcaaat atcagtgotg gtatttttt 12240 12300 ttttttttac ttaaagaaac tgatatgatt aaatattaag agacaatatg atccttgttg gcttgtaacc ctagttttta tigtctigta gttattaaat agagcatctg ttgagggact 12360 12420 cttttaaaac cacagccatg aacagacgtt ggggctaaga gacagagcag cctgcgacag tgtggaccta cctgtagcag ctagcaaagg cctctagcag ctacagtccc ttctggagtc 12480 tttatttgca tgcaaaatgc aaaggagtcc tggtgaccta cctccaaggc agctgccctc 12540 ctgaacactc ccttggaaaa cagtaaacat cattttggaa tgtgaacaac cagagactac 12600 acaggagaaa ggaaaaaaa attctgaaga tgcaaaatct tgggtggctt caccgttcag 12660 ttttttaata aaaggaacaa tatacaacac gttgttcttt ttctcttttg aaatcccttc 12720 tattacagtg attitttct aagattgtca ggatttgaag tgtatgtttt gttttattca 12780 cagcgtaaat tttattcaca gtttaactgt ctgcctgagt gtctttcctt tctctaatta 12840 12900 ccttgaggaa cccaagagcc tgttgtaagg agaaaataag gcccttggat ctcttgagat tcacagatat aagttattga agggaagatg gtcctatgga ggacatattt aaagaaggga 12960 aaaaagaggc tttctcagat atgtcagact gctatagtat acttctacag attatagacc 13020 tccagtacct ctggccagaa agatggtatc gtaaacaccc tattttttt ctttttt 13080 13140 ttcattaggt acaagctttg tgctaagaag ttgacatact ataagctaca aaagttctgt aaagtagata taactagttt cattttatag atagagaaaa ttaatctctt acagtgctaa 13200 gctcacagag tttctaactg taaaatgcta gaacttgtct ttcaagccta aagacttcct 13260 tggggctaaa tagtgaaaaa agccatttca caaataagta aatggtattt agaggcatat 13320 ttggatttcc tggtaaattc cagtctgtga gcatcatgaa tattagttta atgttgcatg 13380 ggctcatgtt gaagttttaa gagaagaact gccttgaagc ttaggtttcc ttagctatta 13440

						13500
ggctactgac	tttcttgcct	aaaccagggt	tttttcattg	aagaccaaaa	ettacctict	13560
ccttcagttt	gtagtttgga	aattggtaga	agagetttgt	aaacttcaaa	ttaagtacaa	
actaactoto	atagtcaaat	ttactaatct	taattacaqt	attgttcaac	igatigetat	13620
cttctacctc	tttaataaaa	aataatggtc	ttatttcctg	ctctgttggt	ttagagetga	13680
attatttaaa	ctttaataaa	cctgaaatta	tagaattata	tttaattcat	aligiciggg	13740
tagactttcc	tctcttgcat	ttctgcttga	atagaagaat	ttttctctag	agagtagtt	13800
atastaatta	ctctgttgat	tranatnact	ctttgtatga	tctgagaggt	atactgttct	13860
gccaccccca	gaagaagtat	ttcacaaaca	tgaattaaga	gtacagtaga	ctgctcccac	13920
getattetga	ttatctatct	gaggtgtggg	cctcataaat	tetttateae	tcaggacctt	13980
ctggaaactt	ttatetatet	cacciccgga	atatatatat	taccataaaa	aacatcagaa	14040
gatgacgctg	ctctctgaaa	eccteecag	tataatttaa	taccgtgaga	taatggagtg	14100
ctttggttcc	cattgcatat	cgcaggtacc	tetgetttea	tetattete	catatatata	14160
attgggtagc	atgttttcat	ctctttccag	attgaaaatc	tgtatttttt	cocytatate	14220
ttcaacacct	aatgcacata	gaactttgta	ggtacctgga	aaatgcacca	cagtitiett	14220
ttctttttgc	agacttttca	caagtattac	caacttacaa	agaattaatt	ttgtaggatt	
ctadaaadac	aaatcaggaa	taataccata	tacatctttt	ttgattccct	getetaaaga	14340
atattatcad	gttaccttcc	tacagagttt	taaaagaatt	gcatatttca	agergaerre	14400
caccatotaa	atataaccaa	agcaactgat	atgtaaaaaa	tatattcaat	ggcatteeta	14460
caggatgtaa	tagggtgttt	tattqttttq	ggttttacat	ttaagtcttt	aatccatctt	14520
gactteett	ttgtataggt	ataagaaagg	ggtccagttt	taattttctg	cgtatggcta	14580
gagitaatt	ccagcaccat	ttattaaata	gggaatcctt	tccctattqt	ttgtttttgt	14640
geeagttete	aaagattaga	taattataaa	tatataatat	tatttctgag	atcttcattc	14700
acggtttgtc	aaagattaga	cggttgtaga	aggatggttt	tttaattact	gtageettgt	14760
tettecactg	gtctatgtgt	cigittitgt	accatgett	attttaatt	aggattatct	14820
agtatagtat	gaaagatagc	atgatgeete	caggirigit	cottottgeet	tataattata	14880
tggctatacg	agctttttt	tggttctata	tgaattttaa	aatagtttet		14940
traaraatrit	taatggtagt	ttaatqqqaa	tagcattgaa	tetgtgaatt	gerrrgggea	15000
atataaccat	tttcatgata	ttgattcttc	ctatccatga	gcatgtaacg	ttttteett	15060
catttatata	ctctctcatt	teettaaata	gtggtttgta	gttctccttg	aagagateet	
tcacttcttc	tatattacta	gatattttat	teteteteta	gctattggga	atgggagttc	15120
attcatcatt	ttactatata	cttacctttt	gttggtgtat	agggateetg	grgaerrerg	15180
cacattgatt	ttgtatcctg	agactttacc	gaagttgctt	atcagettaa	gaagettttg	15240
gactagata	atggggtttt	ctagatatag	gatcatgtta	tcttcaaaca	aagacaattt	15300
ggetgagaeg	cttcctattt	gagtacgett	tatttctttc	tcttgcctga	ttgccctggc	15360
gaetteetee	aatactatat	taataaaa	taataaaaa	gggcatcctt	atcttgtgcc	15420
cagaactccc	gggaatgctt	cgaacaagaa	cccattcagt	atgatattat	ctatagattt	15480
agttttcacg	gggaatgett	tttgggtttg	attacttaa	tacctacttt	attgagagtt	15540
ctcataaaaa	gctcttatta	titigagatac	geeceetta	ctatatatat	tgagataatc	15600
tttaacatga	agcgatgttg	aattgtatcg	aaggeeeee	catttatta	tgagataatc	15660
atgtggtttt	tgtctttagt	tetgtttatg	tgatgaatga	teteetactga	tttgcatatg	15720
ttgaaccggc	cttgcatcct	ggggatgaag	ccaacttgac	tgtggtagat	aagcttttgg	15780
atatactact	ggatttggtt	tatcagtatt	tcattgagat	tttttgcgtc	gaagttcatc	15840
agggatattg	gactgaagtt	-ttattttat	tatcatatct	ctgccaggtt	tiggiateag	
datdatdctd	geeteataaa	atgagttagg	gaggagtccc	tcctttcaa	LEGLLEGGAA	15900
tagtttcaga	agaaagggta	tcagctcctc	tttgtacctc	tggtagaatt	Caactytaaa	15960
tagetataat	cctggacttt	ttttcattag	taggetattt	attactgcct	cacilleala	16020
acttottatt	gatetattea	gggatccaac	ttcttcctga	tteagtetig	ggagtgtgta	16080
tagatagaa	aatttatcca	tttcttctag	attttctagt	ttctttgcat	agaggtgttt	16140
ataatatta	ctattaatta	tttgtacttc	tataaaatca	gtggtggtat	cctgtttatc	16200
gtagtattig	atatatat	cattettete	trattttga	caaagctgac	aaaaagaagc	16260
attituati	gracestata	ttcaattaat	cctactgtat	atctggctag	ccatatgcag	16320
aatagggaaa	. ggaeteteta	ttattaataa	: atatacqaaa	atcaacttac	gatggattaa	16380
aaaattgaaa	. etgiteetgi	tecttaatee	acacacgaaa	agaatatagg	caatatcatt	16440
agacttaaat	gtaaaaccca	aaattataa	accetggaac	. agaacacagg	caatatcatt	16500
ctggacatag	gaatgggcaa	agattttatg	agaaagacac	caaaagcaac	tacaacaaaa	16560
gcaaaaattg	r gcaaatgaga	. tctaattaaa	ctaaagagct	. Cigcacagea	aaagaaacta	16620
ctgtcagagt	gaacaggcaa	. ccaacagaat	: gggagaaaat	ttttteaate	tatccatatg	16680
acaaacctct	aacatccaga	atctacaago	r aacttaacaa	l atttacaaga	aaaaayyayc	16740
cccattaaaa	anttoncaaa	gaacatgaac	: agacacttcc	: cagaagatat	, teatgragee	
aataaacato	r aagaaaagct	caacatcact	: gaccattaga	gacgigcala	Caaaaccac	16800
aatraratar	· catctcatdt	cacaatggto	r attattaaaa	i agicaaacaa	Catgetagig	16860
aggttgtaga	gaaataadaa	. cacttttaca	i ctattaataa	f gaatgtcaac	: LaattCaacc	16920
actotogaac	r acadtataat	: gattcctcaa	ı ggatttagaa	ı ccagaaalal	. Callactyca	16980
tatadaccca	aaggaataga	. aatcattcta	a ttacaaaqat	. acatgcaca:	, gratyttiat	17040
tacagaccca	ttcacaatac	r casadacato	r gaatcaacco	aaatgctcat	cagtgataga	17100
tacagcacta	r agaatatag	acateaacac	catggaatac	tatgcagcag	taaaaaggaa	17160
ctggaaaaag	ayaatgigga	. acataaaca	- adagttada	a actattate	tcagcaaact	17220
tgagatcctg	coutttoag	ggacacggal	. gydgilggdd - attotosoti	ataadtddd	gctgaacaat	17280
aatgcaggaa	a cagaaaacca	accaccacat	a against act	r accarteac	a getgaacaat	17340
agaacacato	g ggcacaggga	ı ggygaataa	_ acacactggg	, goodgeodge	d adaraaaaaa	

17400

tcaagctgag ggagagcatt agaaaaaata gctaatgcat tctgggctta acccatttat gcctagtgtt ccatttctgg aatgctaagc atgtggaagt tctttatatc ctgctcaagg 17460 tcattgccaa ggtctgattt ttcacattca acaaattgca acctctggca taaatgggtt 17520 aatacctagg tgatgagttg ataggtgcag gaaaccacca tggcacatgt ttatctatgt 17580 aagaaacctg cacatcctac acatgtaccc tggaacttaa aaaatttaaa atatatatgt 17640 atatatattt aatatggaat tttaaaaaatt actaatgagt tettttatet gagtaattit 17700 gcatcaacat gcttttatta tggaagagaa gattcagtga gtacaaaatt gcagatacat 17760 gtgtcagaag atccctgaat ataataaggc ttagtattct gtgtcataat tgcctgtttg 17820 17880 tattcctctc tggtctttaa acttcattag ggcaaggatc aactccatct tactaaccat 17940 ttgattccct atgtattaca cgatatatga ccaataataa gccttcaata aatacttgta aaataaagaa tgttatgtaa tatatcatgt ggtattgttt tattgatgtg ttctttgaag 18000 tgttaccttt gtgtccttag aggctatggt gggccctcag gccatatatg ttggatgatt 18060 tagtggaaaa gagattagac tittatattt tattctattt atttatttat gttttaatct 18120 tgtgtaagcc tatagaggcc aagatagggc tcagagttaa aaacagtgat gttctaactt 18180 18240 tcaaaactac taaaaacaaa attagctatc aagggaaatc ctgagtgttc tgactgcagg ggttccccaa agcctggagg accgaagctt tgaaatgctg catggtgtgc ctcacctctg 18300 18360 ttgagtatag tgaggaacat gagctgagga gtggattaga tgaactctta agatttttt 18420 ccaactttac ggtttgagtt tatgagtaag taagtgagga atgagcccag ggactttgac tactttgctg tgcagtaaat tgctgttttc ttagctaatt ctggagtgtg tattttggtt 18480 ttaatgtaat gtcctttcag cactggaaat aaacagattt atgaccctcc attttcacat 18540 gtaacttcca gttccttcag taaaatgctg gaagttgctt ggctgtaacc actgtaacta 18600 tttcctggca gttttgcatt ttattacaat tcgacttttt aaatgcatgg ttcagtccag 18660 ttaataggca gaaaactata gctattcctt ggaactgaca tagggaagtt ggtttctttc 18720 tgaggaaaga tgtgacactc tgatggattt ggcaaaatac caattcagta aaatttgcct 18780 ggttcctttc tgacagcaaa tggaggtaat tgtacgtata tagatttcta cagtaaacaa 18840 agggcaaaaa tggaaacatt ttttgttttt taatgttgct ggaatataat atttccatat 18900 ttggttaatc atcaaatcat tcaactccat gcaaagtact cttttcaaaa ttacaaatca 18960 tcttgatgga ttagacttgg atgtctaaat tttttattat gtattctaaa ttatctatag 19020 19080 gtacattttg aaaattatat atacatgtat cactgtacta catttgttat aaaatgtgaa atattaagcg attaaatact ttattaatgt cataaaattg tgccctaccc aaaatatatt 19140 ttaagaagat atcatttgaa aataatgtaa aatattcttc attattatga ttttgttgcc 19200 aaaagtaatg ttagagtccc tgttactgat aattttcatg actgtaaatt ttcaacattt 19260 ggaaacaaaa ttttctgatg tgttttaaaa tcttaaagaa tttcagtaga ttttgacaca 19320 tttttgttaa aagtatgaaa gtgtcacagc tttagaagga tttagaataa ttatcaattg 19380 gtattaggga tgacaatttt aatagacaaa ttttaactga aacatttgct ttattgatgt 19440 ctaggactaa aaaaaatatt atagtgatgg aaccatttca aaacatctgt ttttaaaaac 19500 ttctgtcaac atgtttgaca gaagtcagaa tagggtaatt ataaaaaaac tgccattttc 19560 ttatgtttgc atcattagta tttgcaaatc cttgtttctt tgcaagtata ttttaaacta 19620 19680 cttgttcatt ttatgagtgt tagcctgatt aattcagata agatgctcaa gtcagtttaa gcaggcagat gtgaaaaagg gaatatgctg tgccttaact atcttatagg gacttactag 19740 cacactgtac ataacagatg aacatctgat attagatctg atgggcacac caatgttgtt 19800 tcatatatta aataatagtg gaagttttca atttaattag tttatttatt tatttattta 19860 tttttgagcc ggtgtttccc tctttttgcc aaggctgggg tgcaatggca catggttgca 19920 19980 gctcactgca atctccacct cccaggttca aaggattctt ctgcctcatc ctcccaagta 20040 gctgggatta caggcgtgtg ccactatgcc aggctaattt ttgtattatt agtagagaca aggtttcacc atgttggtga ggctgctctc aaaatcccga cttcaggtga tccacccgcc 20100 teageeteet aaagtgttgg gattacagge atgageeact gegeetggee aattgtattt 20160 ttatgttaga aatatatatg ggagttacaa tactttgttt ccaatgttcc gctggaaacc 20220 actggttgaa aggataggtc ccagtgtcag ctgcccagtt ggcagttttg gatagaatat 20280 aagttetatg aaggeatgga tgaagtatee tteatggtaa tgatggtaat gttagtatag 20340 teactigttt aatgitgtat aactitttaa etetteeaac tieaatitea tetatatett 20400 tcatagcagt ccagtaaagt agtatcaatt atagatatca ttcctacttt cagataaagt 20460 aactgaggct cactagtttt gacttgctca aggttacgta aatgataagt gacagactgg 20520 20580 atttaaaggg cggagtccac tttactaaac tgcctctgtc ttctagccaa gtttgttatg 20640 taaagtaagt attcagacat tggctaagta tattattaat caagaaaaca gtagaacagg tttaaggaat tttttttcc ctctcctcag tgtcaaaaag cagtcaagta aaagatccaa 20700 gataaataac ttcagttccc aaaaataact tcaattccaa aatttcccta tgactaggta 20760 tatctaattg gatagctgat aaaatgagtg ggaaattgaa gaagggatat titgagaatg 20820 20880 tgtggcaact taatggtaat attgaagaag caaatggata gttattgaat cataatagtt ttttaaactt aaatactagg gcttgatctt catattttag gaaattatct atttgttgca 20940 gtagaaatta gcataaatga atggaaactt aaattatctc atctgtgcaa ggcagtcttc 21000 agagactgat gtttatataa gtgaaaactc agaaaaattt tttggctgca tttcaagctg 21060 gatagegggg teaaaaette aaettettaa ttggtgatae aaegteagaa ateacaaaag 21120 aagtatttca caggaaaaaa tgacataccc cgaaaacatt caaatcaaga aaatcacagg 21180 ggtacagtgg atggtccccc ttaaggtact gcgtacttgg cttccccgct ggtaaatgcc 21240 tetettttae taagttgttg tegtgeagag tggeattgea getetgtaet tttacagaat 21300 21360 tttaaaaggg aaaataattc catcaattta atggaatgtg tagggtttaa gttataacaa 21420 caaaaacaaa gttgtagttt tttaggatta ctcatataaa tagtgtgtct attaagaatt 21480 actggcttta tgaatattaa ataagaaggc tggccgtggt ggatcatgcc tgtaatccca 21540 gcactttggg aggccgaggc agacggatca cctgaggtca ggagttcaag accagcctgg 21600 ccaacatggc gaaaccctgt ctctactaaa aatacaaaaa ttagccgggc gtggtgacgc 21660 21720 atgcctgtaa tcccagctac tcaggcggct gaggcaggag aattgcttga acccggaaga eggaggttge agtgagetga gategegeea etgeaeteea geetgggtga eagaacaaga 21780 ctccatcttg aaaaaaaaa aaaattaaga caaccacaga tataaggatt tgcaattaga 21840 aagcttgaag ggaaattttt ggaacttcta ggtcaaccta aaattacaaa tagggaagca 21900 getttggaga ggaacatttg cacttetgaa gtaataetgt gatttggaet gteagaeatt 21960 gtgatatatt ggcatcacca cacctctgtt aattataaac ttacctattc tcagtgcctt 22020 gttaactgtt gaaataggac ttgacatttg ttgttcttcc tcttctgtta ttcatttatt 22080 cactcattta gtagttaatt acttcctagt gccagatagt tttctaggta ctgaataaac 22140 aaaaatccta ttgtcatagt tatgtttttg tggaaagaac aacctgatag actatcgtga 22200 aaaataaatg agttagtata cataaaacac agcccatgag atatagtctg taattatcat 22260 ccctgcttca tttatttatt tatttattta tttatttaga gaatggatct gattctgtca 22320 tecaggeegg agtteagtgg etggateatt geteactgta aceteaaaac acetggeete 22380 aagtgattcc cccaacctcg gcgttccaaa gtgctgggat taaaggcatg agccactgta 22440 cctggccatt gctcctgttt taaagatgag gaaactgaaa gtacagagag gaacgtgact 22500 tgetcaggat cacacageca atcagtggca gageagteta ggeagtetag geetgaagge 22560 attattettt etttetgtte tgegteaaaa accetaggea ggeatggtaa aaagaetgaa 22620 agagccaagg caacataggt acctgaagaa tgggagaaca cctatgagga ctgctagaaa 22680 ttttaggcag ccctttaaag gccttgggca acaatttgaa cgtgactcat gagtcagtta 22740 attetetgea cettttttt tttagagaat acaatggata aagcaatgae etttgtaaca 22800 tgtaaacctg tatttgaatc ctttcctctc catttaattt tgcagagtca ccttttcttc 22860 attagaaaga aattttatcc caaagagatt atcgtgaggc tcaaataata taggtggaag 22920 ccctttgggt ttaaaaaaaa gccttttctg tcatttctgg gtatctcccg tcagtgattt 22980 23040 tagtaattgt ttacctctct ggctcttcgt gagaagacaa attgtaggaa gaagtggagg atggcattgg gtaggatgct tagttctagt tccaccactt ccttaggtct tttttttgtc 23100 ccccaagact atatcatttc tgtgttctct tgaacctgta agatttatga gtaatctgta 23160 caatatttat aaagtatgaa atctctgcca ttgtggcaca aaagtagcca tagacaatgt 23220 ataaatgaat gggcatgctg ttctccagta aaactatatt tatagaaata ggcagtcttc 23280 tccaatttta gtttgctcac ccctttccta tagaactcag gtttatcata tacaatgtta 23340 cacattattc ctttgaataa attgtttacc taatactttt taaatttggg cattttctag 23400 gacattetat tgtttttatt tttaacttgt gttatactge agtgaatgte tteetgtgtg 23460 tagcattttg tttgtgtatg tgtgtcaata tctataaagt agctcttaag aactctggaa 23520 acattgtcag actgcttcct caaacagcag aggtgggagg gagcatcggc ctaaccctac 23580 ctggcctgcc ttaccagcat gcaaccaagg agaagagaat aggatcaaga gccagtgcca 23640 gagagaagta cataatacaa ctttatggag tttaggttgc atcctataaa gttaccatgt 23700 tacactgttt cgatctacca aagtagaagt tttacatagt ttagtatgaa gttaatttta 23760 ttaacetttt cacacaacac acceteteat attgetgeec aacaatgtee tgggtetttg 23820 tttccatggt catcatattg agtagggttt tagcagggac ttgagtagtt gggaactgaa 23880 ctcatgctag tgaagccatt cttcactaga agcagacata tgggatccag aatatcatga 23940 acaaccagct gggtacagtg gctcacacct gtaatcccag cactttggga ggctgaagga 24000 agcagatcac ctcaggtcag gagtttgaga ccagcctggc caacatggtg aaaccctatc 24060 tctactaaaa atacaaaaat tagccaggcc tggtagcaca tgcctgtagt cgcagctact 24120 tgggaggetg aggeaggaga ategettgaa eetgggagge ggaggttgea gtgageegae atetegeeag tgtaeteeag eetgggeaac agagtgagae tetgtetgaa aaaaagagaa 24180 24240 tatcatgaat atcaccaaag ataaaagcaa gatgcggata tgagtagccc agagtaactt 24300 ttcctgtgct atataacaca gtgagtggtg attcccacaa ttcaagtcca gtttttctgg 24360 attctaaagc catacatttt taactctccc cctaaatatg atttgaattc agagagtcag 24420 atgcaataag gtaattttaa etttaagtgt agtttageee acacatttet etaaaetggg 24480 ggttggcaaa ctacaaacct ctttttgtaa gtaaagtttt attggaacac agcctagctc 24540 24600 attcatttat gtattccctt tgcacctttt aggttgagta gttgtgactg aggtcttcca gccttcaagc ctaaaatatt tactatctag tccttcaaaa agaagtttgc caacctctgc 24660 aaacaagtga aataatgtgt attagagtag agcaggagtc cacaaactac aacctctgga 24720 gccaaaacca ccctactgtc tgtttttgta aacagaaatt ttatagaaac atagttgacc 24780 cetgtgecaa tttgtttgag tettgetttt gatggetttt gtgetacaag ggeagagttg 24840 aacagttgca agagaactaa gtggcctgca aagcctagtg gtctttgctg tctggccatt 24900 ataggaagtg tttaccaaac cctgcatttg atcatggaat cccagaatgt ttataccttt 24960 gaggattttt ttttctactt tccatatttt acaggcaaca gaactaaagc ctcgtaaaat 25020 cttgcccaag gttctacaaa tagtcttttc tattaaatta agtcagagcc tgaaattgtc 25080 tgtgcccaag tctctcctca gaaatttagc acagcatttt ccctttctgt ctcccacatg 25140 ctacacagte atectggate atgtgeeceg cetecatgag gagatgttet aacatgaggg 25200 tgactaggct ctggagccag agcatcttag ttcaaatcct ggatctgtta aaaataatag 25260 ttatttttca gttctaacac tgaaataaga caaaaggcca tattactgaa ataaagtgta 25320 25380 aagaatatat ttaatactca ggttacttta gccccctcat gatcagaata tgctaataaa ttgagagatt gacagaaaaa aaggattctg tttcactgtg gctcacacct gtaatcccat 25440 cactttggga ggccgaggtg ggtggatcac ttgtctggag ttcaagacca gcctggccaa 25500 catggcaaaa ccccgtctct actaaacaat acaaaaatta gccaggcgtg gtggtaagca 25560 cetttaatcc cagetactcg ggaggttgag gcaagagaat cgcttgaacc tgggaggtgc 25620 aagttgcagt gagccaagat cacaccactg cactccagcc tgggcaacac agcaagactc 25680 catccctgga aaaaaaaagt tcatcatttg ttcttgtagt ttcctagtgt ggcccttgtc 25740 tcagtggaaa attgtagtgt gatagactga ggagaattct gtttctgcca cttcgcctgt 25800 tgccttggta ggagctcctt atctctgagc tgagctcctt ttgtccttgg taaaatgtgg 25860 ttattatcat ctgcatcctc atagtcttct tgtaaggact gtgaagtcac ttttgaaaaa 25920 25980 ceettggeet teatteetgg aagtgttttg ttatatacat tttgtttggt ggeeaacagt 26040 gctaaccaca gaaaagtttg tatgtcttct ttttctagaa taattcttac agtgtaacct 26100 ctcagggtga agtttttgtt ttgaaagggg cacatttact gtgaatgaga gccatggaaa 26160 tggacctgaa atttgaagac agattttact tggttttctt ttctcttatt tgtttgcagt 26220 ataaagaaga gggcagcaag gtgaccactt actgcaacga gacaatgact gggtgggtgc 26280 atgatgtgtt gggccggaac tgggcttgtt tcaccggaaa gaaggtggga actgcctctg 26340 agaatgtgta tgtcaacaca gcacacctta agaattctca ggaaaagtga gttgctacaa 26400 atgagacata cotttagttt totttatag tatatatgaa tatgtgtgta catttttgga 26460 attttagttt gattatacaa aatatctttg gcttagaaat attaggcatg ctatgtaaaa 26520 ccttactgga aaaataaatt gaccaacatt attgagagta ttttttcaaa gtgttccaaa 26580 agtaatggac caatgattac tttaaatgaa atcatgtaat ggaccacaga attgcaaatt 26640 actaataaag aaaagccatt ttgcttattg ccatgtaata acatgttgca tgatacaagt 26700 agatacgtat gtttatgctg caacaagtat aggtgatact aattgggcaa cttttaaaca 26760 agaccataaa taactgaaat caaagttctt agtatttatg cagcctgttg gtttgcgagg 26820 gctgccataa caaagtacca cagactgggt ggcttaagga aggttgtttt ttcacagttt 26880 26940 tggaggctag aagtccaaga ttgaggtgtt gtcaggtttg gtttcttcca aggccacact cettggettg cagatgtetg ettgettact gggetectaa acagtetttt etgattgtee 27000 taatgteete ttettataag ggeateagte atattggatt ggggeecace catatgaeet 27060 aattitacct taatgacctc tittaaagctc tgtctccaaa tacagtcata tggctgtgat 27120 acagggggtt agaatttcaa cgtatgaatt ttgaggggga cacaattcag actataaact 27180 gcagttaatg tttactgtta aattaaatct ataactgact aaaccacaca aacaggagat 27240 ttcaaattag actttattag ttttggaagg aagagatgaa atgttgttac tttttctgtt 27300 ttatgtagtt gtaaaagcca ctaaaaatgt acatgtacaa atcatcccaa gccaggcaac 27360 attagtaatg aatgactgca gcacagaggt aagagagatg atttaaagga ggatgaattg 27420 tetgcaaagg tgctgggcaa gatctagact aattcatece ettcatttta agtttaggtt 27480 ttaaataget ttgtttgget tgateetaga getacacatt taettttaac ttgtttaett 27540 tgtaccctat catttaggat atgctatgta ctattgtact ctatttgata tttcaaacat 27600 teteteattt agtgaagaag eteceaaceg gagtgeteag aacetacatt geeteacetg 27660 tgaagtgage atgtgggact gaattgeett tgaggtetet tteagetett aatgatetgt 27720 tatcccatag taagatacat tatttttaat ctcgttggat cttaaacacc aaaaataata 27780 27840 gtatttaaga cgtaggatgc tatcttgtca ttattttaat gcacatgtca acacacgagg ttttgctaga tgttatgata aagcaagcga aacagcaggc tactgctcct caaatatcta 27900 cagtcaatga aatattgact ggcgttgtgg gaaaatatct caaaagtatt ttatttacaa 27960 tttaaaatat attettttge etaaagaaac aatgaaacaa etataaettg tttttgttat 28020 tgtgttagtg tagtcataca tatgatacag ttttataatc tgcttgataa gggtacgtct 28080 ctgggttttt cacactttgc aacaagtggg aaagaacttc gacaaaaaca ttaaaacatt 28140 atcaacctgg ttgcacgttt ttctgattat tttcagtgct cttaggtttt tagaccatat 28200 caaaattctc tctctacaca catgatttat aagggaaaga aaagtttgca gtatgcctaa 28260 aatgttcctc aggttaatta tatcttgttt tgcatagttg aatgtttatg gaagtcttag 28320 atagtgagtc actctgaaac cacagactct titttaatag taataatatg gtgagttcta 28380 taatteetag catetageac acaggtatga taaatgtttt aattaagtga ataatcaget 28440 tectgaatti ttetaetttg taaatatget etttgigtgt tgaatetait taeatatata 28500 tccaagcatt tggcacaagg taaaccaatg tggctcagat tttaatgtta ttgtgaatca 28560 cttggggatc ttgtttaaaa aaaaaaaaaa aaaggagatt ctgattcagg tgatctgggc 28620 tgagtactta cagtatgcat ttctaataaa cttctgggtg ttgctactga tattggttca 28680 agaactaaat totgagtaac aagtataaac cgaatgtcca taaagtataa tttcttttag 28740 tatcatatgg ttataatgct tgcattttgt atatatgttg catacaggtt ttgcttttct 28800 cttttttctt attaaaaagg ttataaaggt acactgtaga aactgtaggg agtaggggaa 28860 agettggcat etcatgecae cattcagagg taaccatgtt tggcatttta aaaatgcatt 28920 tatagigtgt gtgtgtgtgt gtgtgtgtgt gtgtgtgtgc gcgcatacat atatatgtat 28980 gtattataca tatacgttaa tatacatata atatacatat attactgtgc aaaagttgat 29040

	tgattatgta	taaactttga	tatettetea	tatttaatat	aatatagttg	29100
aaattgatta	tccatatcat	taaataactt	tctagacatt	ttaaatgaat	atatagaaaa	29160
tgageaetet	ttaatcagtc	cattaictta	gaatatttat	ttcggttatt	tacaatctat	29220
tgaaacatca	aaagtacttc	atagaaata	cttatacato	catcttagtt	aacttgaact	29280
tagtagttta	gagaagacat	acggaaaacc	totaggetat	tgatacatat	toccaattac	29340
tttatttta	gagaagacat gattgtacca	geeaggetgt	aggetat	tatastacc	tottttaatt	29400
cttcctgaaa	gattgtacca	Ctttecactt	aggeacagag	catttttaaa	gacaggtatt	29460
actctattta	catcagtaaa	gactatatet	gaaattatet	tatcaatcc	attcagaagt	29520
ctaataggct	ctacaagtat	gatcacaact	ttgtgaaage	catcaacycc	atcattagga	29580
cttggactgc	aactacatac	atggaatatg	agactettae	cetgggagat	atgattaata	29640
gaagtggtgg	ccacagtcga	aaaatcccaa	ggtaatcaag	cacacactcc	ttaataaaa	29700
aaaatatgaa	tgctgaatac	catcctccct	cctaagcagt	cctaccagtg	ttatatata	29760
ttttattggt	catcccagtt	gtaacttttt	atgtgatctg	ttaacgatet	catatatat	29820
ttgatacata	ttctgtcact	ctccaagtcc	tatttatgag		acatgletge	29880
tgtttccatt	gcccctttc	cattttctac	actctggcat	geagetttgt	eetgetteee	29940
ccatgctatg	gattagcctc	ctgccggtaa	ccacctgagg	ggttetteet	geetgetgea	30000
taaaraaaaa	ccatggcaat	atagtagaga	aagagcttaa	gagacactag	gelggeealg	
agagataga	gatggagttc	atattcaaat	tatcttqtcc	aaagctcata	ggtaggggtt	30060
tttgaaaggg	agettagggg	aadadataaa	gataaccaaa	taacagatgc	tigetgetga	30120
++aat+aaaa	tagataaaat	cacagggagt	tgaagetgte	ctcctgtggg	Cigaaligei	30180
tataaataaa	accataggag	tagaattact	gggtccaggt	agaaccacgg	gigicagaca	30240
tocaaaaata	aaataaaata	aaataaqata	anggtaagat	aaaataaaat	aaaalaaaal	30300
aataaataaa	ataaatataa	aatttccctq	aaaagatatt	tcaaaaagcc	agicilagai	30360
totacaataa	tgatgttatt	tactagagta	attgatggag	ttgcatgtct	tataaccici	30420
adaataacaa	ctgacaatct	ctcaagtctg	cqccttagct	ggactcaggt	teetettete	30480
accadageet	gactgcctcc	attagettea	caaaaqtqqt	tgggtttcag	ggcaaggccc	30540
attataattt	aaactgtagc	cgaaatgact	tccaaagtta	gcttggccca	atageceagg	30600
2242444224	tagaagggaa	datadagat	agattaactt	agetetett	Cactettata	30660
aatatttaag	tggtataatt	tttgcaaagg	caatttcata	cctgccatct	ctttcgtcgc	30720
tagatataga	agttgggatt	cttagctgtt	ttatgaaatg	cttctagttt	Cattertea	30780
tacctette	tgggagactg	atttgagtaa	taataaaact	ccagtttccc	atacagccgg	30840
taccaagttc	attaaactca	ttttctatta	caatttccct	gtcttgataa	tcagttctgt	30900
etergegrga	aggaaggaga	acconttood	tgattacgag	actgtgttac	tgcccactac	30960
gtaggeegtg	aggaaggaga	accegeeggg	cccatctaat	tatgaccata	actatattta	31020
ctaatggata	ctgctttcaa	aggatetaag	acacaatgaa	tgaaaacttt	catttttcat	31080
teacettget	etgettteaa	ttgatatgat	taggggtgaa	cttgcctaca	gtaactgtaa	31140
cttcatttgt	getgtteeet	atataaaat	cctctctata	ctttgatgtc	cagcaaaaaa	31200
aatttgccac	aaaaaaaagt	totagatata	cctctetacg	tctcaaccag	aggtggcatt	31260
aaaaaaaaaa	aaaaaaaagt	caccagiaia	atttettagt	ttaggaaatt	atatcataat	31320
tttcatctt	acceataage	cecatygeat	taatttaaaa	aaaaattatt	tttctgaaag	31380
actttgaatc	tgtetagtea	gaaatttaga	tatctaatat	acttccttaa	catnttgtta	31440
tatagctgga	tetagettag	gatetacate	cacctaatat	ttaggatgat	catnttgtta	31500
aatggccacn	ggnataagtc	etgtaatgee	acacticgee	aaaaattata	gtgactaagg taggtaggtt	31560
ggtaaggaat	tggaaagcaa	tggggageta	geagaacceg	gaatacaato	taggtaggtt	31620
atttttcctt	aatacattga	aatagcctca	aatteteaga	gaacacaacg	tttaatcctc	31680
taatatctgt	agagttcatg	gctcaaattt	gtattattig	aataaactac	taatagatta	31740
ataattacto	aactaaaaca	ctttgaaatg	tgagagttcc	ettateteet	tegeaggeat	31800
atgacagagg	tgtggcttct	cacacctttg	gttgcccttg	ccctaccacc	caaaccccta	31860
gggggagcat	gcagaggggc	aggtgcagag	gccatggggg	gtgettttgg	getetggeee	31920
cacagcagtg	tctaggagtg	gatgttggag	actcctgaag	cccaagtggg	catgtgttac	31980
agtgtgctct	: ttcagcttag	ccgtctgcag	atggettgtg	ttaatcaggu	cattagaccc	32040
catocottat	tacaaaaaca	gagatccaat	: qtqacagcct	aagttettyt	cagiglace	32100
araaraatto	r datcacacdt	aaactaaaa	r gatgagcaca	. aggtillali	. gagtggtgga	32160
aataactete	cacaaaacaa	ctctcagcca	ı gagaaggagg	atggagggg	aaggtgttet	32220
taccataaa	r todacttott	: cctattctcc	: tctqqqttca	aatacctct	, CCCCCCCCC	
atactatact	rtcccaccac	tetecacago	: tctataccac	tetgtteete	; igelecting	32280 32340
gatgttgagg	· teettatate	: tatacctact	: aagattttgg	gtttatatg	gggaaggatg	
aaaaaaaataa	r caaaccaaaa	ı gacacetttt	: ttggtgtgaa	aacagaaat <u></u>	detgeetee	32400
cttaggggct	- taggtettea	agettaagge	ı tagageetti	: gctgagggad	dadddtttt	32460
tacccagtat	: ttaaatatat	: cctqtccata	a tcaacattac	taacttttt	; alclycayac	32520
taataatoot	- aaggtgtgg	: atttttcaac	: tqtqaqacta	ı tgtgaaggti	titeetgiee	32580
aactgatgg	atcctcccat	: aattctacco	c ctttcttaaa	agaatettti	geaglactic	32640
tacaaattta	a ttctagagaa	a titattatat	: gtgaaatgct	: ctagttaato	c aaaattggaa	32700
aacadaadaa	- atcatatccc	: cttctcaaat	t tcaccaaagt	gaagteeta	gigicitaa	32760
tatatatac	a tracacados	a adotoadato	: tattcaacaa	a caaaaatcca	a aacaaycatc	32820
a a concentration	a atattaacac	- ttgagggtag	r ggagactgtc	geteetgee	t gaaagatggg	32880
acctcact	acadetdett	taccaagtg	t catatgctat	gtttctgag	g actcctgcta	32940
, ageceage		J - J	_			

aagctccctt ctccctccag ccaaccactt ttgttttaga caagggctgg gtttatgaag 33000 gactgttttc atgactaaag ctttatagaa ggtttaagat aaggagatgg aattgagtga 33060 agtaggaaat atgaaagcag atattataat ctggcttcct gatttttcac tagcattttt 33120 gtttataaat tagttctgtt ctaagaatcc aatgacgtaa tagaaactct caaagattct 33180 taacttgaga tatagggagt ctttgaaact gctgaaatta cagacagcat ttattgttta 33240 tgagcatttc tgaatctaga gctttcacta gatttgtaaa gaatgtgggc caaaagatta 33300 agagccaatc ctgtatcttg tactcaaaat gtttgtaatt ctcacctttt tatcccccag 33360 actcctcttg ctctcttc attttcacag tgttactgga aaggggtcct gatccagacc 33420 ccaagagagg gctcttggat cttgtgcaag aaagaattta gggcgagtcc tcaatgcaaa 33480 gtgaaagcaa gtttattaag aaagtaaagg aataaaagaa tggctactcc atagacagag 33540 cagccetgag ggcagetggt tgtccatttt tatggttatt tcttgattgt atgctaaaca 33600 33660 agggatggat tattcatgcc tececttttt agaccataga gggtaacttc etgacattgt catggcattc ttttttttt ttgacagagt ctcactgtgt tgtccaggct ggagtgcggt 33720 aaagcaatct tggctcactg caacctctgc ctcctgggtt taaatgattc tcctgcctca 33780 gcctcccaag tagctgggat tacaggcatg acccaccatg cccagccaat ttttgtattt 33840 ttagttgaaa cagggttttg ccatgttggc caggctggtc ttgaactcct gacttcaggt 33900 gatctgccta cettggcctc ccaaagtgct gcaattacag atgtgagcca ccaaacctgg 33960 cetgtcatgg cattettaaa etgtcatggt getggtggga gtgtagcagt gaggaagace 34020 agaggtcact ctcatcgcca tcttggtttt ggtgggtttt agctggcttc tttactgcag 34080 cetgtetgtt etateageaa ggtetttatg acetgaatet tgtgetgace teetatetea 34140 ttctatgact tagaatgcct taactgtctg ggaatgcagc ccagtaggtc tcagcctcat 34200 cttacccagc tcctattcaa gatggagttg ctctgggtca aacacctttg acaacatcat 34260 34320 taagcetcag tteteacact gtttttgttt tgtttgtgtg tgeaatgatg ggeaaatete tgccttatag gatggtagaa aaaaggaact taatattgta atgactgttt tgtgccagat 34380 aattgettta aactgtatea geatettatt tagteetgtt aatgatatga atgttatett 34440 cataacagct gccattttat taaggactta tcagagaaaa acactgttct aagcacttgt 34500 34560 tacccattat tacattgaat tttcataaca accctttgag gtaagcatga ttatacccac 34620 tttaatagaa gtgaactgta gttttgtaat gttaggttcc ttgccaaatg ttacacagat agtaagtgat aaaatcatat gccctgaaat tacattatgc tgccaaactt aaatttcttt 34680 tttatccttt atattagtat attcttaggt ttaaacaaga caactagtta acacatacta 34740 gattttgtcc acagttcctg gctcataact cccatagccc ttgtcactat cttttaancg 34800 ttggggcaca ttaggcctca gaagtaggcc tcangaaaac agagtctctc tctctctc 34860 tetetgatet tetteegeee teeteteace tgeecaggge ageaetttaa tetteteetg 34920 cetttetgat ettgggteat aagacettea titeeaaaga tgteetgtgt cataceetaa 34980 aggaaggaac actgaacaga gagaggctca gaagaatctg gacaggcctt gctgtgttta 35040 35100 catcattece tttatgteca gteacatete tacatggttg teagttgtge etatttgatg aagtccccat ataaggctca caaggacagg gtgcagagag cttccagata gctgaacaag 35160 35220 tggaagttcc tggagggtgg cgtgttcagg gagggcatgg aagctgtgtg ccccttcccc catacettge cetacteatt tetteatetg ttteatttgt agtatetttt ataataaace 35280 actaaacatt agttagtatt tetetgagtt etgtgagtea etetageaaa ttaattgaae 35340 ccaaggaggg tgtcatagga tccccnacat tatagctggt tggccagaag cacaggtaaa 35400 caacctaggg ctttcaattg gcatgagaag tagggggcag ttttgtggga cggagccctc 35460 agcctgtgag atctgatgcc atctctaagt acacagtgtc aaaactggat tggaggacac 35520 ccagctagta ttcactgtga aattggttgc ttgcttgatt tgtggggaaa aacccacatg 35580 catttgatca cagaagtctt ttgtgttgac agttgatagt gttcagtgag agaattaaaa 35640 aaaaattgag tttcttcttc aacatactct ctcaatgtga aaccacagaa actatttcca 35700 ttcaaagatg gaaatggttt gtttgcatct tagtttttat ttatacatct tagaagaaat 35760 gtccaagett tgttttttet etcaecetat atataaaatt acetatgagg caeagatttt 35820 tatgateett gattatatag aetttgteea aattgtgtgt tttatageat taetgtaaet 35880 tgttatagta atctttgtgt atattatgtc tcttaacatt gtcttccata ttgttaatga 35940 ccatctcata tttatctctg tatcatgtat atcttcaacc aatgtgactg gcttaggaga 36000 aaaaattagt gaacaattaa ctagtgtttg tgtaatctat acaattgtca aggttacaat 36060 tgctattttt gaagaaatcg ttgttgtttt tctctttgtt tcatctcagt tccattttgt 36120 36180 caaggattcc ttttttttt tttttttt tttttttt tttttgaggc ggagtcttgc tctgtcaccc gggctggagt gcagtggtgc aatctcggct cgctgcaagc tccacctcct gggttcatgc 36240 36300 cattetectg ceteagecte cegagtaget gggactacag geaccegeca ceaegeceag ctaatttttt tttgtatttt tagtagggac ggggtttcac tgtgttagcc aggatggtct 36360 caatctcctg acctcgtgat ccgcccgcct cggcctccca atgctgggat tacaggcgtg 36420 agccaccgcg cgtggcccct tgtcatgtat tcttaacctg tgttatatct aagagaaggt 36480 gtgagaggeg ggaccatttg tggataggtg cagagggcat gaagtageee agaaagaate 36540 tttgccattg actaaatttt agcctagtaa aaaacatgtg gtaaccactg aaaaactaga 36600 acagtgtgat atgacaatgc ccagttgaat aagaaattca aatagtttat agtaacaaaa 36660 aataattttt accacattgt gactagtgcc ctaaaaacaa atttgaagga gcagagagag 36720 agaggaagtg agtttteget gggggetggt gagtggagge tactttatga geagttttga 36780 aaattacaag ttagggaaaa actcttaggg gagttttaag tggtgagcaa caggcacttg 36840 aggttacagg agcagcagca taaagatata gaacagagag gccatttggc agtcttgggg 36900 aaactccaag aagtcgaatg tgtctaaagc tgtggttctc tctctgtgtg tgtgtgtgtg 36960 tgtgtgtgtg cgcgcgtgtg titgtgtgtg tgtgcatgtg tatgtatgtg tgaaatcgct 37020 aatacagaga agctgttaga acaattttct cacttcccaa aaatgtccgt tcattcatgg 37080 gcctaggcaa ctctcctttg tgtgtcttac agcccaacac tgtcatataa ggtgtggttc 37140 tataatgaaa cagttttatc tgttgtttac ggagctagtc agcctgtgtt atgcttgtta 37200 ctggttgagg gtgtccaggt tcttggcttc ttgaacaaag aattggacaa aactcacaaa 37260 tgaggcaagg aaagaatgaa gcaacaaaag cggagattta ttgaaaatga aagcacactc 37320 cacaggatgg gagtgggcct aagtaaatga ttcaaggccc tggttacaga attttctggg 37380 37440 gtttcaatac cgtctagagg tttcccattg gttacctggt gtatgcctta tgtaaatgaa gagggtggag ttaagttaca aagtcattta ctcagtatag gccttgtgtt aatggagagg 37500 37560 gtgttactcc tgggggttgt ggcccatgta aacggagagg atgaagtgaa gtgacaaagc cettegeatt cetgecattg etgaagtgtt tecaetttat ttagttetag gaagteagtg 37620 tgaattggcc ttatgttccc tgcctccaga acctgttctc ctgcctcaca tagacccttt 37680 tttccctttg ccaacttcac ttcttttaca gccacctcac taccaatgtg tctgtctcct 37740 aagtcaaaca tcagtgattc ctctgttttc tctaaaccct tcttatgtct tctacttctc 37800 atctctttct tggtcaaaaa tctttcaaaa atgagtaaga atgcagctat tcaggcaaac 37860 taaaaataac atcacagtga tatacaaaac cagtgtcatt tcacaaagga aaattatcaa 37920 tactagatcc tgaaaaagaa acagcgaatg aaagccattt acacaactcc attgtgtaat 37980 tgacacattg aatcactcat aaaacaggtg ctctgggtct gaatctagat cctagctagt 38040 ctggtagctg aaatcataga attatagtag agtttaggaa atcatcctca aaggaaagat 38100 tatatgttga tatcaaatgt atatttcctt tctaggccca aacctgcacc actgactgct 38160 gaaatacagc aaaagatttt gcatttgcca acatcttggg actggagaaa tgttcatggt 38220 atcaattttg tcagtcctgt tcgaaaccaa ggtaaaaaaa taagcctaag ttttttgtta 38280 atttgtttgg aactatttat tgaacagttg ctctgtgtga tggatttcgg ggatacctag 38340 atggaatggg catgatecee tttttacaga aatagaaaat aggtggeeta tgaattatte 38400 tttcctttta tatccatgac aaactttagt aaaaaatttt cttttctact gagcttagca 38460 tttattcagt actcttctca atatattttc caggtagcta gtgacaatca gagtgatatg 38520 taagacaaac tcatttgtcc tcctagtagg aaagattcta gtagaagcaa agaattgtgt 38580 accattetge aagtggtttg ttggaatett tetttgatae etgtteetgt attececeae cccattaat ttagtcatta attactacat gaacccgtaa aataaatcct taaattattt 38700 teetggtaga ttttttgage tgtgtaagga cettteaatt caetttacat tagaataega 38760 tatgtgatgg taagtattaa cocagettee tgagtgatgg egtgagggeg gaacceaggt 38820 tcatgaaaag tattcctatt attgaatttt accagttatt ttcagaagtt tgatacaatg 38880 tgagttgatt tcataacatg tcctctaact gcacttgata gcaaattatc ttgttatcct 38940 gagttgtagc caacaatgac ttggagaatc tatgcaatac tcagttttat tacttctaag 39000 ctcattttga agataatact acccatggct gatttgttac tataaaatag gtttagtatt 39060 tgctgtctgg aaacattctg attagtgtct cctgggagga ttataaattt atagtaccca 39120 aagantaaac ntgttgtttc cetttcctaa acttttagtg nataatneag tetetgeegt 39180 gtctcatttt catcacttgc cctccanagc tcccatctca ctgaattctt gcagtgttct 39240 gaatgttgag agccccaang tgggtcttat aacagccagt cagcaacatt tctgtttttc 39300 atetgacace aagggteteg tetetttget tttetaceag ttattetggg etetteaget 39360 ctaaagaaag tataggteet gaaatettte ectacettet caattteetg gggagggett 39420 ctttggaaag tgggattgga aataagataa atttgaagat aattgagaaa tgaatggaaa 39480 gtgaaattga agggtccatg ttaagagatt gcaagttatg ctatcaccaa atagattttt 39540 tgtgcctgag aggattaatt catagtgcat attatgtgtt gactttatca ttgaggtcct 39600 ggcacatgat agcattggca tgatataatt tgagctactg atactatagt gttgcttctg 39660 gtgttgttac cagaacatct aaaatatatt aggatttttt taatggcaga ggaaatgaag 39720 actaatatga catagteett gteetagtga tttacagttt agcaagacat acaagcaaaa 39780 cattaaagta aagcatgata actactttaa taaagcattt tttaaattca ttggtaacat 39840 aagagaaggt agaagagttt agcaaaccct tcccaaaaga aatgattgac aagttatatg 39900 agataataat toagggaaag gaaattogac tttotaaago caaattattt gacattggtt 39960 ttcatatage ttggtaaaag ctgttatttt ctcccatgtt ctttattctt tgactgttat 40020 aagtatgatt tgtacagaga aatggcaatt tcaaaacaga gggctttgat ggattaattg 40080 ctttgaattg atccctcatc tacagtatct tgtcaggtac ttgagaaaat aatgtactta 40140 40200 aagtttcctc ttttgacttt cttttggtat tctatactgt aagttgggga aaaaagtatt ttetetteet getaattggg etaettgaaa atteecacca aetttgeeaa taecagtgtt 40260 ctgtataacc cagaattcag aattagctgc aattaaggga attcacagct tttctgtagt 40320 cagagagcaa attgaaatta aagaaaaaag aaatagtggg aggacaaatg aggttttacc 40380 tttacacttg aaaacagatt taagaacaag ccttatacct agatttatta atactttgag 40440 gtatgagagg gaagagaagc ttagaaatac ggcagaatgg gctttctttg ttcttccc 40500 agctatgctg tttttattta ttattgtatt tttaagagag aagggaagtg tctctcctgg 40560 gtcacattaa ttaggaaata cagagtgttt tcataatgcg taaagtctag tccatttaag 40620 tettgtttea aaatgetatt tatattattt gageaggaag geagagaeet taaaetgete 40680 40740 cacccaattc attttacaca aaagattaaa aagaaaaaaa cagtgtcaaa aggtcaagtg

40800 cccagtgttg cacaactaat gataggcaaa acaagagagg aggggaaaaa aaagaatcct 40860 gactcccgac tcctagttca gtgtgttctt cactgttaga aggtgctgct gaacatagtt ataccatatg aagatcacac tatctatttg agattgtaga aatttgatta ctgcagagct 40920 40980 ctggctgggc tagattcact tcttattctt tattgcattg cagtattctt aagagataaa tggctctttt agaatcagat tggccttggc tgttgaaatg aggcattaat taccttggta 41040 gctgacacat tcttacaggt caggggcttg atgaagttta tcttcttccc ttgttcctgt 41100 41160 gattgctctg taaatagaac acattcagag cccttgaatg cacttgcagc ctgtgcctcc 41220 cacagtgatc gatggtcaga taatgggagt ttaatgacca gtactgagag agattatttc catggctgct atgggccaag aaagctgggt ggtcagaaag ggaccttttc cagactctcc 41280 tgggttgtgt tatttctttg acattggttt cctttcatga ggcgccaagg tgtatttgta 41340 41400 agttgtccag tgttgcacag ctaatgaggg gcaaaacaag aaaggaggaa aaaaaaagta tcctcactcc tagttcagtg tgttcttcac tgttggaagg tactgctgaa cacagttata 41460 41520 tgttcagtgt acaatgtaca atgttctttg acattccgtc atttgaagga tgggtcctat 41580 ggatagtatc atctgcatgg ttttgaaaac aaaagatata agctaatttt gccctgtcta gtgactacga gacagggaga gaaaatctga atatttgtta aagtagacac agacccataa 41640 41700 attgaaaagg acactaatcc tgccttagga gacagtaagg cacttgtccc tgctatctat tagctgtgtg tccttggaca gctcattgct tctttctgag ccaccgttac acgttatcta 41760 41820 tcaagtgagc aggttgtaca ctagatgaat tcacaggtcc ttcttccaag tgcttttcta 41880 atcttcataa tttagataat ctctcagtag caaaacagtg tacaatatgg tcaatctgag atttttaggg ggagaatttt agggaacatc agaaatggca gtagttaaaa ggaaatagga 41940 42000 ctcacaggct gacttctctc tataacttca catggtagaa gggatgagag ttctctctgg agcettttgt attaggtcac taatcccaaa ggccccacct cctaagacca tcacttttgg 42060 gattggggtt ttaacatgat tttagaggga cataaacctt catctcattg cattagagat 42120 atttgaaagc tcagctcacg tgtattcctc cacagctcac atgtattcct ccatcaccca 42180 acctgatggc tttgaacgtt gtagacataa atcctttcat cattatcaag aatattgcca 42240 aaagcttctc agaaattatg aggggttttt ttagtttcta aaatattctc aaagaaagtc 42300 42360 ccatgtacta atgtttgcct tttgatgaaa aaggatgaaa tcttaatgat tgccttaata 42420 agctcaacaa tgcttgttag ttgagtcttc ttattgtgct gattcttata aacaacaaca ttcagtataa acattaatgt atgtgattca ctaaggtttt tgcatgattc tctgtgaggc 42480 ttcagatgtc tcttggatta tgtgtctttt tttcatcgcc agcatcctgt ggcagctgct 42540 actcatttgc ttctatgggt atgctagaag cgagaatccg tatactaacc aacaattctc 42600 agaccccaat cctaagccct caggaggttg tgtcttgtag ccagtatgct caaggtaagt 42660 gitgcatttc agacaccatt tatgagctat ttacctgtgt gcagctggct gttgttggca 42720 aaggcaaaag gatgatgcag tagagagagc gcagtgtcta tagtcagaaa atctgagtgc 42780 aagtctggcc ctatcactta ttaatggatg attgctcatg gaatttactg taccatccag 42840 caaaatgtca atagttacta tatattgagt gagctctgct tgttacatat attgcctaac 42900 42960 aatgctcaaa actctgagaa gtagtaagta taatccctat ttatgggcgg ggaacaggaa ctaagaaatt tttctaataa tttgaaggtc tcacagcttt tagcattgga gtttcacttc 43020 taatcatcgt ctccaaaacc caacttttat taaaactata ctaacactgg tttctctctg 43080 43140 ggagaatttt aaaattctgt acttagggct gggcacagtg gcttatgcct ataaccctat cactttggga ggctgagatg ggtgaatctc ttgagtccta gagtttgaga ccagcctggg 43200 43260 caacacggcg aaaccccttc tctattaaaa atacaaaaaa ttagctgggc gtggtggtgt 43320 gtgcttgtag tcccagctat tcaggaggcg gaggtgtaag aatcacctga gcccaggagg tcaaggctgc agtgagccga tatcatgcca ctgcactcca gcctgggcaa acggagtgag 43380 gccctgttat gaaaaaaaa aaatctgtac ttaggctttc agatcaggct gtatgtgatg 43440 43500 tatgtcgaaa acacagctat aattgattga gggagaaacg ttaccatttt aaagtttatg 43560 ctttcaagcc cagatttggc cactaggaat ttcccagctc actagtgaaa ctgctgatga gtgattattt gccagtgagc ctttcattct ttctaaaata tgtactacta gttgtgactt 43620 43680 gtaggctata ggggctataa tatatcaaga caatctttat cctcatgaag cttacagtta agtaagagat agagattaaa taattataac aacagagtga agaacagtga agaaaaagta 43740 43800 cagagttata atatatata tagggccagg actgcatgag gaaggtagga aagacatttc ggcaagaggt tgtcagggaa aagacttgct tgagaaagag ccaagttgtg gggtctggct 43860 gcttagcaat gaccataata cctaactttt gctatttta catgaagtaa ctaatttaac 43920 cctatgagga aagtactact accatctaga ttttacaggt aagtaagcag agatacagag 43980 44040 aagttaaact cttcacacgg ctttggcttt aaacctatat aggcttcaga gcctccccac 44100 ttaaccactt tgccatagct acatccatat taggtgctaa gtagatatct gttaagtaga aggaggatga aaggatagtt agctagttgg aaaatggatg gatgaatgaa gtgatgctta 44160 44220 agctaagaac aactttcagg ggtaacatgc aaagaataat ggagcaaaga agaaaaaata 44280 gaaaatggga taatcctttt tctactaagg ggtaaccatg tgtgttattc atcttcaggc tgtgaaggcg gcttcccata ccttattgca ggaaagtacg cccaagattt tgggctggtg 44340 gaagaagett getteeeeta cacaggeaet gatteteeat geaaaatgaa ggaagaetge 44400 tttcgttatt actcctctga gtaccactat gtaggaggtt tctatggagg ctgcaatgaa 44460 44520 gccctgatga agcttgagtt ggtccatcat gggcccatgg cagttgcttt tgaagtatat 44580 gatgacttcc tccactacaa aaaggggatc taccaccaca ctggtctaag agaccctttc aacccctttg agctgactaa tcatgctgtt ctgcttgtgg gctatggcac tgactcagcc 44640

tacttccgga tccgc acaccaattc ctaaa gtaaagggga attgg caaatagatt tccat acctttcaat cggcc gaagatggtc agcta	etggat tgttaaaaac cagagg aactgatgag attgta gggtatgcct gtatat tcacagactg cgaaga tatttgtctt cactgg ccatttttt atgaag taatagagtt aatgtg aaaacataga ttatca aaactttaa	tgtgcaattg tccagtattt tagactttca cagaattaaa ctaagtattc tgcttaatca cttatttta	agagcatagc cataatgatc gcagcaatct actgccctta aattaagtgg tttgtaattc aattgtacca	agtggcagcc tgcatcagtt cagaagctta attttaatat gaattttctg aacatgcta atcacaagaa	44700 44760 44820 44880 44940 45000 45120 45120 45186
--	---	---	--	---	---

<210> 2 <211> 1838 <212> DNA <213> Homo sapiens

aattetteae etetttete ageteeetge ageatgggtg etgggeeete ettgetgete

<400> 2

tgcacctatc ttgacctgct gggcacctgg gtcttccagg tgggctccag cggttcccag cgcgatgtca actgctcggt tatgggacca caagaaaaaa aagtagtggt gtaccttcag aagctggata cagcatatga tgaccttggc aattctggcc atttcaccat catttacaac caaggetttg agattgtgtt gaatgactac aagtggtttg cettttttaa gtataaagaa gagggcagca aggtgaccac ttactgcaac gagacaatga ctgggtgggt gcatgatgtg ttgggccgga actgggcttg tttcaccgga aagaaggtgg gaactgcctc tgagaatgtg tatgtcaaca cagcacacct taagaattct caggaaaagt attctaatag gctctacaag tacatggaat atgagactet taccetggga gatatgatta ggagaagtgg tggccacagt ggcaccggct ggggtgagaa tggctacttc cggatccgca gaggaactga tgagtgtgca attgagagca tagcagtggc agccacacca attcctaaat tgtagggtat gccttccagt atttcataat gatctgcatc agttgtaaag gggaattggt atattcacag actgtagact ttcagcagca atctcagaag cttacaaata gatttccatg aagatatttg tcttcagaat taaaactgcc cttaatttta atataccttt caatcggcca ctggccattt ttttctaagt attcaattaa gtgggaattt tctggaagat ggtcagctat gaagtaatag agtttgctta atcatttgta attcaaacat gctatatttt ttaaaatcaa tgtgaaaaca tagacttatt tttaaattgt accaatcaca agaaaataat ggcaataatt atcaaaactt ttaaaataga tgctcatatt tttaaaataa agttttaaaa ataactgc

geogecetee tgetgettet eteeggegae ggegeegtge getgegaeae acetgeeaae tatgatcaca actttgtgaa agctatcaat gccattcaga agtcttggac tgcaactaca cgaaaaatcc caaggcccaa acctgcacca ctgactgctg aaatacagca aaagattttg catttgccaa catcttggga ctggagaaat gttcatggta tcaattttgt cagtcctgtt cgaaaccaag catcctgtgg cagctgctac tcatttgctt ctatgggtat gctagaagcg agaatccgta tactaaccaa caattctcag accccaatcc taagccctca ggaggttgtg tettgtagee agtatgetea aggetgtgaa ggeggettee catacettat tgeaggaaag tacgcccaag attttgggct ggtggaagaa gcttgcttcc cctacacagg cactgattct ccatgcaaaa tgaaggaaga ctgctttcgt tattactcct ctgagtacca ctatgtagga ggtttctatg gaggctgcaa tgaagccctg atgaagcttg agttggtcca tcatgggccc atggcagttg cttttgaagt atatgatgac ttcctccact acaaaaaggg gatctaccac cacactggtc taagagaccc tttcaacccc tttgagctga ctaatcatgc tgttctgctt gtgggctatg gcactgactc agcctctggg atggattact ggattgttaa aaacagctgg

60 120

240

300

360

420

480 540

600

660

720

780

840

900

960

1020

1080

1140

1200 1260

1320

1380

1440

1500

1560

1620 1680

1740

1800 1838

<210> 3 <211> 463

<212> PRT <213> Homo sapiens

<400> 3

Met Gly Ala Gly Pro Ser Leu Leu Leu Ala Ala Leu Leu Leu Leu 10 Ser Gly Asp Gly Ala Val Arg Cys Asp Thr Pro Ala Asn Cys Thr Tyr 30 25 20 Leu Asp Leu Leu Gly Thr Trp Val Phe Gln Val Gly Ser Ser Gly Ser 40 Gln Arg Asp Val Asn Cys Ser Val Met Gly Pro Gln Glu Lys Lys Val 55

```
Val Val Tyr Leu Gln Lys Leu Asp Thr Ala Tyr Asp Asp Leu Gly Asn
                   70
Ser Gly His Phe Thr Ile Ile Tyr Asn Gln Gly Phe Glu Ile Val Leu
                                   90
               85
Asn Asp Tyr Lys Trp Phe Ala Phe Phe Lys Tyr Lys Glu Glu Gly Ser
                                                   110
                               105
            100
Lys Val Thr Thr Tyr Cys Asn Glu Thr Met Thr Gly Trp Val His Asp
                                               125
                          120
        115
Val Leu Gly Arg Asn Trp Ala Cys Phe Thr Gly Lys Lys Val Gly Thr
                                            140
                       135
Ala Ser Glu Asn Val Tyr Val Asn Thr Ala His Leu Lys Asn Ser Gln
                                       155
                150
Glu Lys Tyr Ser Asn Arg Leu Tyr Lys Tyr Asp His Asn Phe Val Lys
                                                        175
                                  170
                165
Ala Ile Asn Ala Ile Gln Lys Ser Trp Thr Ala Thr Thr Tyr Met Glu
                                                   190
                               185
            180
Tyr Glu Thr Leu Thr Leu Gly Asp Met Ile Arg Arg Ser Gly Gly His
                                                205
                            200
Ser Arg Lys Ile Pro Arg Pro Lys Pro Ala Pro Leu Thr Ala Glu Ile
                                            220
                        215
Gln Gln Lys Ile Leu His Leu Pro Thr Ser Trp Asp Trp Arg Asn Val
                                       235
                    230
His Gly Ile Asn Phe Val Ser Pro Val Arg Asn Gln Ala Ser Cys Gly
                                                        255
                                   250
                245
Ser Cys Tyr Ser Phe Ala Ser Met Gly Met Leu Glu Ala Arg Ile Arg
                                                   270
                               265
            260
Ile Leu Thr Asn Asn Ser Gln Thr Pro Ile Leu Ser Pro Gln Glu Val
                            280
     275
Val Ser Cys Ser Gln Tyr Ala Gln Gly Cys Glu Gly Gly Phe Pro Tyr
                       295
                                            300
Leu Ile Ala Gly Lys Tyr Ala Gln Asp Phe Gly Leu Val Glu Glu Ala
                                       315
                    310
Cys Phe Pro Tyr Thr Gly Thr Asp Ser Pro Cys Lys Met Lys Glu Asp
                                                        335
                                    330
                325
Cys Phe Arg Tyr Tyr Ser Ser Glu Tyr His Tyr Val Gly Gly Phe Tyr
                                                    350
                                345
Gly Gly Cys Asn Glu Ala Leu Met Lys Leu Glu Leu Val His His Gly
                                                365
                            360
 Pro Met Ala Val Ala Phe Glu Val Tyr Asp Asp Phe Leu His Tyr Lys
                                            380
                        375
Lys Gly Ile Tyr His His Thr Gly Leu Arg Asp Pro Phe Asn Pro Phe
                                        395
                    390
 Glu Leu Thr Asn His Ala Val Leu Leu Val Gly Tyr Gly Thr Asp Ser
                                    410
                405
 Ala Ser Gly Met Asp Tyr Trp Ile Val Lys Asn Ser Trp Gly Thr Gly
                                                    430
                                425
            420
 Trp Gly Glu Asn Gly Tyr Phe Arg Ile Arg Arg Gly Thr Asp Glu Cys
                            440
 Ala Ile Glu Ser Ile Ala Val Ala Ala Thr Pro Ile Pro Lys Leu
                         455
```

```
<210> 4
<211> 21
```

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 4 aggaggttgt gtcttgtagc c

10031<u>8</u>89.012502

<210> 5 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Primer	
<400> 5 agtgcctgtg taggggaagc	20
<210> 6 <211> 24 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Primer	
<400> 6 tgtcaactgc tcggttatgg gtaa	24
<210> 7 <211> 24 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Primer	
<400> 7 tcgagcttct cttcgtacac cact	24
<210> 8 <211> 24 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Primer	
<400> 8 tgactacaag tggtttgcct tttt	24
<210> 9 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Primer	
<400> 9 tgctgccctc ttctttatac tgc	23
<210> 10 <211> 24 <212> DNA <213> Artificial Sequence	

<220> <223> Description of Artificial Sequence: Primer <400> 10 24 gcctctgaga atgtgtatgt caac <210> 11 <211> 20 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Primer <400> 11 20 cctgccccaa aaatgagata <210> 12 <211> 21 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Primer <400> 12 21 tcgaaaaatc ccaaggtaat c <210> 13 <211> 24 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Primer <400> 13 24 gggcctagaa aggaaatata catt <210> 14 <211> 24 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Primer <400> 14 24 aatttgttcg gaactattta ttga <210> 15 <211> 20 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Primer

<400> 15	20
tcgcttctag catacccata	20
<210> 16	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer	
<400> 16	24
ggcgatcaga ctggcacact agaa	
<210> 17	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer	
<400> 17	24
cttacccata accgagcagt tgac	
<210> 18	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer	
<400> 18	24
gcagactgtg ctcaaactgg gtag	
<210> 19	
<211> 24	
<212> DNA <213> Artificial Sequence	
2213> Artificial bequeince	
<220>	
<223> Description of Artificial Sequence: Primer	
<400> 19 tctactaatc agaagaggtt tcag	24
totactaate agaagaggtt toag	
<210> 20	
<211> 23	
<212> DNA <213> Artificial Sequence	
ZIJV VICILICIAI podaoma	
<220>	
<223> Description of Artificial Sequence: Primer	
4400 20	
<400> 20 ggcacattta ctgtgaatga gag	23
ggododood oog agamaga gaa	

<210> 21	
<211> 21 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer	
<400> 21	0.1
gtctcatttg tagcaactca c	21
<210> 22 <211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer	
<400> 22	21
ccactttcca cttaggcaca g	
2210 22	
<210> 23 <211> 22	
<212> DNA	
<213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Primer	
ZZZ35 Description of Artificial Sequence. 111mer	
<400> 23 aggatggtat tcagcattca ta	22
aggatggtat teageattea ta	
<210> 24	
<211> 24	
<212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Primer	
<400> 24 atcctagcta gtctggtagc tgaa	24
<210> 25	
<211> 24	
<212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Primer	
<400> 25 tetaggtate ecegaaatee atea	24
<210> 26	
<211> 24	
<212> DNA <213> Artificial Sequence	



